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EXAMINER

LAM, THANH

ART UNIT

PAPER NUMBER

2834

DATE MAILED: 02/13/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.
09/996,694

Applicant(s)
Joho

Examiner
Thanh Lam

Art Unit
2834



-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136 (a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on Jan 3, 2003
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-35 is/are pending in the application.
- 4a) Of the above, claim(s) 9, 10, and 20-34 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-8, 11-19, and 35 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claims _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☒ All b) ☐ Some* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
*See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s). 4 6) ☐ Other:

Art Unit: 2834

DETAILED ACTION

Priority

1. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1-8, 11-19 and 35 are rejected under 35 U.S.C. 103(a) as being unpatentable over Reiter, Jr. et al. in view of Benezech.

Reiter, Jr. et al disclose process for the production of a rotor of a synchronous machine, containing permanent magnets, the rotor having a core of ferromagnetic steel, on and connected to which core are permanent magnets which in their turn are surrounded by an outer cylinder of a non-magnetizable material, and which rotor has at both axial ends a closure disk of a non-magnetizable steel with a stub shaft, wherein the core is constituted with an internal space.

benezech discloses a process comprising: introducing a resin mass into the internal

Art Unit: 2834

space; supplying said resin mass to a region of the permanent magnets by centrifuging the rotor; and hardening of the resin mass in the region of the permanent magnets (col. 4, lines 39-45).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to rotor of Reiter, Jr. et al. and apply the process of assembling rotor as taught by Benezech in order produce the rotor with low cost.

Regarding claim 2, the proposal in combination of Reiter, Jr. et al. and Benezech disclose heating and simultaneously running up to a centrifuging speed the rotor with the introduced resin mass, such that the resin mass is conducted outward, due to centrifugal force, from the internal space through radial channels in the core, or from the internal space through holes and longitudinal slots in the core, to the region of the permanent magnets, and the cavities present there are filled up; and maintaining the rotor at the centrifuging speed during the hardening of the resin mass.

Regarding claim 3, the proposal in combination of Reiter, Jr. et al. and Benezech disclose arranging the permanent magnets on the core by inserting the permanent magnets with play into the outer cylinder; arranging at each end after the introduction of the resin mass into the internal space the respective closure disk, each closure disk consisting of non-magnetizable steel with a stub shaft and the core centered in the closure disks; and connecting the outer cylinder to the closure disks.

Regarding claim 4, the proposal in combination of Reiter, Jr. et al. and Benezech disclose the resin mass is introduced into the internal space in the core in the form of a solid rod.

Art Unit: 2834

Regarding claim 5, the proposal in combination of Reiter, Jr. et al. and Benezech disclose the resin mass contains at least one filler.

Regarding claim 6, the proposal in combination of Reiter, Jr. et al. and Benezech disclose the outer cylinder is shrunk onto the closure disks.

Regarding claim 7, the proposal in combination of Reiter, Jr. et al. and Benezech disclose the shrunk-on outer cylinder is connected flush to the closure disks by means of a circumferential weld seam.

Regarding claim 8, the proposal in combination of Reiter, Jr. et al. and Benezech disclose the circumferential weld seam is pre-welded in only one pass before the centrifuging of the resin and is only completely after-welded after the hardening of the resin.

Regarding claim 11, the proposal in combination of Reiter, Jr. et al. and Benezech disclose magnetic neutral zones are present in annular space portions between the core and the outer cylinder, which neutral zones contain no permanent magnets, and the process further comprises inserting filler pieces into said annular space portions, the density of the material of the filler pieces being at least approximately equal to the density of the material of the permanent magnets.

Regarding claim 12, the proposal in combination of Reiter, Jr. et al. and Benezech disclose inserting a filler strip between adjacent permanent magnets.

Art Unit: 2834

Regarding claim 13, the proposal in combination of Reiter, Jr. et al. and Benezech disclose inserting a further filler strip between the permanent magnets and the inner circumferential regions of the outer cylinder lying opposite said permanent magnets.

Regarding claim 14, the proposal in combination of Reiter, Jr. et al. and Benezech disclose forming a damping cage by connecting the further filler strips at their ends to a respective flexibly constituted ring; arranging said further filler strips around the core; and installing the closure disks.

Regarding claim 15 the proposal in combination of Reiter, Jr. et al. and Benezech disclose producing a cage of an electrically conductive material with end rings and axially-running longitudinal rods with transverse grooves for distributing the resin; inserting the permanent magnets into the cage; and pushing the cage with the permanent magnets into the outer cylinder followed by adhering the permanent magnets to the outer cylinder with a provisional adhesive and thereafter pushing the core into the cage, or pushing the core into the cage and thereafter pushing the outer cylinder over the cage with the permanent magnets.

Regarding claim 16, the proposal in combination of Reiter, Jr. et al. and Benezech disclose stacking metal sheets on a centering tube to produce the core, the centering tube having holes for the passage of resin mass arranged in the internal space and the metal sheets having slots aligned with the holes for the further passage of the resin.

Regarding claim 17, the proposal in combination of Reiter, Jr. et al. and Benezech disclose the core is integral and is constituted with an internal space, which internal space serves

Art Unit: 2834

as a storage space for the resin mass, and from which internal space channels are constituted running in a radial direction toward the outside of the core.

Regarding claim 18, the proposal in combination of Reiter, Jr. et al. and Benezech disclose the core is constituted at both axial ends with a polygonal recess, each closure disk being constituted with a polygonal projection corresponding to the recesses of the core, and the process further comprises inserting the projections into the recesses during assembly of the rotor in order to form a positive connection for force transmission between the core and the closure disks.

Regarding claim 19, the proposal in combination of Reiter, Jr. et al. and Benezech disclose the core has an outer circumferential surface constituted of polygonal shape with many planar surface portions, the dimensions of each individual surface portion being conformed to the dimensions of the permanent magnets so that a magnetic gap formed between the core and the permanent magnets arranged on the surface portions is minimized, and a predetermined transmission of torque from the permanent magnets to the core is attained.

Regarding claim 35, the proposal in combination of Reiter, Jr. et al. and Benezech disclose the filler strips are connected by spot welding.

Election/Restriction

4. Applicant's election with traverse of claims 1-8, 11-19 and 35 in Paper No. 9 is acknowledged. The traversal is on the ground(s) that claims 1-35 is sufficiently relate that a thorough search. This is not found persuasive because process claims 1-19 have different class

Art Unit: 2834

from apparatus claims 20-34 and each groups have distinguish species that has a separate status from each other.

The requirement is still deemed proper and is therefore made FINAL.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Thanh Lam whose telephone number is (703) 308-7626. The fax phone number for this Group is (703) 305-3432.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group receptionist whose telephone number is (703) 308-0656.

A handwritten signature in black ink, appearing to read 'Thanh Lam', with a stylized, flowing script.

Thanh Lam

Patent Examiner